

<p align="center">Advisory Action Before the Filing of an Appeal Brief</p>	<p>Application No. 10/693,131</p>	<p>Applicant(s) HUH ET AL.</p>	
	<p>Examiner Farid Homayounmehr</p>	<p>Art Unit 2439</p>	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 27 April 2009 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 2 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: 1-24.
- Claim(s) withdrawn from consideration: 29-35.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Kambiz Zand/
Supervisory Patent Examiner, Art Unit 2434

Farid Homayounmehr
Examiner
Art Unit: 2439

Applicant argues that modifying Roh according to the rejection would render Roh unsatisfactory for its intended purpose. However, Roh's intended purpose is clearly identified in section 1 as: "We design the security model and security protocol to support strong encryption and authentication mechanism. In order to protect against unauthorized or masquerading ONU in the EPON, we consider user authentication and

ONU authentication separately." Modifying Roh to include additional fields in a message does not render it unsatisfactory for protecting against unauthorized access or masquerading ONU in the EPON, or placing the encryption function in RS layer instead of MAC layer, which protects the header of MAC frame, and has the advantage that it protects against traffic analyzing and prevents OAM traffic hacking and MPCP message eavesdropping, clearly stated in section 3. The statement in section 4.2, which is cited by the applicant, indicates an advantage of the system, but not the sole purpose or intended use. There is nothing in Roh that says adherence to MAC protocol frame structure is a necessity for the system to perform its functionality or intended use, which is protection of EPON from eavesdropping, hacking and violation of privacy.

Applicant further argues that references identified by the examiner to show that inclusion of an additional data field in a message to include additional information was known in the art are only show a proprietary message protocol to transfer public keys. However, all cited arts show a data field in a message comprising several fields, that transfers a public key. The underpinning of examiner's argument is related to a field in a message, the field used to transmit a public key. That is the improvement necessary for Roh to make the claimed invention obvious, and that is what shown in the cited arts.

Applicant further argues that in claim 1, provides a security service provided during an authentication procedure, but Roh performs the security service after the authentication procedure. However, as explained in the rejection, when the gate_discovery message is enhanced to include the OLT's public key, Roh's enhanced system provides the service during the authentication, just as applicant's invention does.

Applicant further argues that Roh encrypts the whole MAC frame as the encryption in Roh happens in RS layer, which is below MAC layer, but applicant's claim 1 does not encrypt the MAC address. However, as mentioned by the applicant, Roh encrypts the whole MAC frame after finishing the distribution of the public key. The limitation of claim 1 that encrypts only part of the Ethernet frame is related to a transmission from the ONU to OLT is not a message sent from OLT after the public key distribution is finished. In addition, there is no limitation in the claim that requires all encryption to be performed in the MAC layer.

Applicant once again argues that modification of Roh would be contrary to its purpose of developing a security structure which does not modify standard EPON MAC message. However, as mentioned before, the purpose of Roh is not merely a security structure that does not modify EPON MAC. While the protocol does work without modifying standard MAC messages, it is not the main purpose, not it is a requirement. The one skilled in art would have recognized the advantages of the system working based on the concept of key distribution in an EPON to protect and secure the optical network (the real purpose of Roh), and modifying the standard message to trade off one advantage (standard MAC messaging) for another (more efficient distribution of OLT public key).

Applicant's argument relative to other claims is based on inclusion of the same features discussed above in those claims.

Applicant requests a copy of the cited reference Cryptography and Network Security, authored by Stallings. The book is cited for very basic teachings of public key cryptography and digital signatures. Applicant does not specify any particular feature of the claim for which the support for teaching is required. Accordingly, a copy of selected pertinent pages of the book's third edition is enclosed with this action. Additional information will be provided in response to more specific request for information.

According to discussion above, applicant's argument relative to allowability of the pending claims is found non-persuasive.